

## Claims

1. A method of operating a telecommunications system in which mobile terminals may communicate with base stations over an air interface and a communications network is provided for linking each base station to other points in the network via one or more nodes, a communication to another user terminal being supported by one or more first radio links between one or more current base stations and a mobile terminal through a plurality of current nodes of the system, the method comprising the steps of:
- providing to the mobile terminal information defining explicitly a least some of the current nodes of the communications network supporting the communication; and, in preparation for setting up a further radio link between the mobile terminal and a target base station while the current one or more first radio links are still supporting the communication or one or more of the first radio links has just been lost: the mobile terminal transmitting the information defining explicitly a least some of the current nodes of the communications network supporting the communication to the target base station.
2. A method according to claim 1, wherein the information is a list of addresses of the relevant network nodes.
3. A method according to claim 1 or 2, further comprising the step of at least partially re-using the old communication path supporting the one or more first radio links for the new communication path including the further radio link, whereby the reused part of the old communication path terminates on one of the nodes defined in the information.
4. A method according to any of the previous claims, wherein the method is part of a handover procedure or call re-establishment or assignment of a target base station to candidate set from neighbour set or assignment of a target base station from candidate set to active set.
5. A method according to claim 4, wherein the method is part of a handover procedure and the further radio link is set up before the one or more first radio links are terminated.
6. A method according to any previous claim, further comprising the steps of: providing

the mobile terminal with pre-authenticated reference data for that mobile terminal; copying the pre-authenticated reference data to at least some of the current nodes of the communications network supporting the communication; and, in preparation for setting up the further radio link between the mobile terminal and the target base station: the mobile terminal transmitting at least a part of the pre-authenticated reference data to the target base station.

7. A method according to any previous claim, further comprising the step of: the target base station beginning fast power control with the mobile terminal in preparation for setting up the further radio link between the mobile terminal and the target base station before the path through the network supporting the further radio link is complete.

8. A telecommunication system in which mobile terminals communicate with base stations over radio links, comprising:  
a communications network for linking each base station to other points in the network via one or more nodes, a communication between a mobile terminal and another user terminal being connected via one or more first radio links to one or more current base stations and through a plurality of current nodes of the network, wherein, in preparation for setting up a further radio link between the mobile terminal and a target base station while the current one or more first radio links are still supporting the communication or one or more of the first radio links has just been lost, the mobile terminal is adapted to transmit to the target base station information defining explicitly at least some of the current nodes of the communications network supporting the communication.

9. A system according to claim 8, wherein the information is a list of addresses of the relevant network nodes.

10. A system according to claim 8 or 9, wherein the communication path including the further radio link partially re-uses the communication path including the one or more first radio links, the reused part terminating on one of the nodes defined in the information.

11. A system according to any of the claims 8 to 10, wherein the system is adapted to provide the mobile terminal with pre-authenticated reference data for that mobile terminal

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and for copying the pre-authenticated reference data to at least some of the current nodes of the communications network supporting the communication, and, in preparation for setting up the further radio link between the mobile terminal and the target base station, the mobile terminal is adapted to transmit to the target base station at least a part of the pre-authenticated reference data.

12. A system according to any of the claims 8 to 11, wherein the target base station is adapted to begin fast power control with the mobile terminal station before the path through the network supporting the further radio link is complete.

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13. A method of operating a telecommunications system in which mobile terminals may communicate with base stations over an air interface and a communications network is provided for linking each base station to other points in the network via one or more nodes, a communication to another user terminal being supported by one or more first radio links between one or more current base stations and a mobile terminal through a plurality of current nodes of the system, the method comprising the steps of: providing the mobile terminal with pre-authenticated reference data for that mobile terminal; copying the pre-authenticated reference data to at least some of the current nodes of the communications network supporting the communication; and, in preparation for setting up a further radio link between the mobile terminal and a target base station while the current one or more first radio links are still supporting the communication or one or more of the first radio links have just been lost: the mobile terminal transmitting at least a part of the pre-authenticated reference data to the target base station.

14. A telecommunication system in which mobile terminals communicate with base stations over radio links, comprising:  
a communications network for linking each base station to other points in the network via one or more nodes, a communication between a mobile terminal and another user terminal being connected via one or more first radio links to one or more current base stations and through a plurality of current nodes of the network, wherein, the system is adapted to provide the mobile terminal with pre-authenticated reference data for that mobile terminal and for copying the pre-authenticated reference data to at least some of the current nodes of the communications network supporting the communication, and, in preparation for

setting up a further radio link between the mobile terminal and a target base station while the current one or more first radio links are still supporting the communication or one or more of the first radio links have just been lost, the mobile terminal is adapted to transmit to the target base station at least a part of the pre-authenticated reference data.

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15. A method of operating a telecommunications system in which mobile terminals may communicate with base stations over an air interface and a communications network is provided for linking each base station to other points in the network via one or more nodes, a communication to another user terminal being supported by one or more first radio links  
 10 between one or more current base stations and a mobile terminal through a plurality of current nodes of the system, the method comprising the steps of:  
 in preparation for setting up a further radio link between the mobile terminal and a target base station while the current one or more first radio links are still supporting the communication or one or more of the first radio links has just been lost:  
 15 the target base station beginning fast power control with the mobile terminal before the path through the network supporting the further radio link is complete.

16. A telecommunication system in which mobile terminals communicate with base stations over radio links, comprising:  
 20 a communications network for linking each base station to other points in the network via one or more nodes, a communication between a mobile terminal and another user terminal being connected via one or more first radio links to one or more current base stations and through a plurality of current nodes of the network, wherein, in preparation for setting up a further radio link between the mobile terminal and a target base station while the current  
 25 one or more first radio links are still supporting the communication or one or more of the first radio links has just been lost, the target base station is adapted to begin fast power control with the mobile terminal station before the path through the network supporting the further radio link is complete.

30 17. A mobile terminal for use in a telecommunication system in which mobile terminals communicate with base stations over a radio interface via one or more radio links, the mobile terminal being adapted to transmit to a target base station information defining explicitly at least some of the current switching nodes of the communications network

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supporting an existing communication between the mobile terminal and one or more current base stations over one or more current radio links in preparation for setting up a new radio link between the mobile terminal and the target base station while the one or more current radio links are supported or have just been lost.

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18. A mobile terminal according to claim 17, wherein the information is a list of addresses of the relevant communications network nodes.

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19. A network element for use in a telecommunication system in which mobile terminals communicate with base stations over radio links, the network element being adapted to receive information explicitly defining at least some of the current nodes of the communications network supporting an existing communication between a mobile terminal and one or more current base stations over one or more current radio links, and for setting up a communications path with a further network element using the explicit information in preparation for setting up a further radio link between the mobile terminal and a target base station while the current radio links are still supported or have just been lost.

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20. A method according to any of claims 1 to 7, wherein the explicit information defining nodes supporting the existing communication includes explicit information defining at least two levels of a hierarchical telecommunications network.

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21. A system according to any of claims 8 to 12, wherein the explicit information defining nodes supporting the existing communication includes explicit information defining at least two levels of a hierarchical telecommunications network.

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22. A mobile terminal according to any of claims 17 or 18, wherein the explicit information defining nodes supporting the existing communication includes explicit information defining at least two levels of a hierarchical telecommunications network.

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